

## APPENDIX I.

### EVALUATION CRITERIA FOR OPEN SPACE SUBDIVISIONS

A good set of criteria for evaluating open space subdivision plans can greatly increase the likelihood of successful outcomes. Standards should be clearly stated, avoiding vague language. Following the criteria as consistently as possible can help planning boards avoid the problems that sometimes result from poorly planned open space development.

Clear evaluation criteria help applicants understand the planning board's expectations, and make it easier for developers to implement the true intent of the ordinance. The objective is for applicants to use the criteria as a guide in designing open space subdivisions, which should enhance the design and function of open space developments.

The following summary of evaluation criteria offered for planning board consideration is from the highly recommended reference work, *Conservation Design for Subdivisions* by Randall Arendt.

Planning boards may evaluate proposals to determine whether the proposed preliminary plan:

1. Protects all floodplains, wetlands, and steep slopes from clearing, grading, filling, or construction (except as may be approved for essential infrastructure or active or passive recreation amenities).
2. Preserves and maintains mature woodlands, existing fields, pastures, meadows, and orchards, and creates sufficient buffer areas to minimize conflicts between residential and agricultural uses.
3. Sites dwellings on the least prime agricultural soils, or, in those situations where development must be located on open fields or pastures because of greater constraints in other parts of the site, at the far edge of a field.

4. Maintains or creates an upland buffer of natural vegetation at least 100 feet in depth adjacent to wetlands and surface waters, including brooks, streams, rivers, lakes, and ponds.
5. Designs around existing hedgerows and treelines between fields or meadows. Minimizes impacts on large woodlands (greater than five acres), especially those containing many mature trees or significant wildlife habitat, or those not degraded by invasive, non-native vines.

Construction should be avoided on wooded areas of any size on highly erodible soils with greater than 10% slopes. However, woodlands in poor condition with limited management potential can provide suitable locations for residential development. When developing any woodland, care shall be taken in the design to avoid disturbing (for buildings, roads, yards, septic disposal fields, etc.) all large trees or obvious wildlife areas to the fullest extent practicable.

6. Leaves scenic views and vistas, particularly as seen from public roads, unblocked or uninterrupted.
7. Avoids siting new construction on prominent hilltops or ridges by taking advantage of lower topographic features.
8. Protects wildlife habitats of species listed as endangered, threatened, or of special concern by the U.S. Environmental Protection Agency or state agencies.
9. Designs around and preserves sites of historic, archeological, or cultural value and their environs, in order to safeguard the character of the feature, including stone walls, spring houses, barn foundations, cellar holes, and earthworks and burial grounds.
10. Protects the rural character of roadsides, and improves public safety and vehicular carrying capacity, by avoiding development that fronts directly on existing public roads.

11. Establishes buffer zones along the scenic corridor of rural roads including historic buildings, stone-walls, hedgerows, etc.
12. Landscapes common areas (such as community greens), cul-de-sac islands, and both sides of new streets with shade trees.
13. Provides active recreational areas in suitable locations with convenient access by residents, and adequate screening from nearby residences.
14. Includes a pedestrian circulation system designed to assure that residents can walk safely and easily on the site, between properties, and to activities or special features within the neighborhood open space system. All roadside footpaths should connect with off-road trails, which should link in turn with potential open space on adjoining undeveloped parcels.
15. Provides preserved open space that is reasonably contiguous. To the greatest extent practicable, this land should be designed as a single block with logical, straightforward boundaries. Long thin strips of conservation land should be avoided, unless the conservation feature is linear, or unless such configuration is necessary to connect with other streams or trails.

The open space should generally abut existing or potential open space land on adjacent parcels (such as in other subdivisions, public parks or properties owned by, or eased to, private land conservation organizations). Subdivision open space lands should be designed where possible as part of larger contiguous and integrated greenway systems.

## APPENDIX II.

### WATER SUPPLY, WASTEWATER TREATMENT, AND STORMWATER MANAGEMENT

An open space development proposal in an area not served by municipal sewer or water often brings out safety concerns about accommodating wells and septic systems on smaller-sized lots. Some communities have defeated the land-conserving purpose of open space developments by increasing their minimum lot sizes for clustering because of concern over sufficient separation of sewer and water systems. But many efficiency-gaining options are available. Developers and planners must determine the best choices for the specific situation and conditions of each site.

The whole idea of open space development is to allow greater flexibility, creativity, and efficiency in designing sewer and water systems and other development infrastructure for a specific parcel of land, so that a portion of the parcel can be preserved as open space. Depending on the site, one or more clusters of homes could share a well and/or septic and leach fields. Some developments have one community well to serve the entire development, with groups of two or three homes sharing a septic system.

In certain situations, shared leach fields can be located within the open space with little or no impact to that open space. The flexibility of clustering in an open space development gives the developer a wide variety of innovative options for providing water and sewer services.

*The information in this Handbook is intended as a general introduction to these innovative systems. If you are considering implementing any of the innovative or alternative treatment and disposal facilities mentioned in this section, consult state and local codes and guidelines to determine which systems are permitted in the area. Expert guidance, fact sheets, and resource publications are available from the New Hampshire Department of Environmental Services.*

## ***Water Supply***

A public water system, as defined by The Safe Drinking Water Act (SDWA), serves piped water to at least 25 persons or 15 service connections for at least 60 days per year. A public water system may be owned by a homeowner's association, investor-owned water company, local government, or other entity. A private water supply system serves just one or a few homes, and is not connected to the public water supply.

The state of New Hampshire also uses the SDWA definition of a public water system (PWS) as "a system that provides water via piping or other constructed conveyances for human consumption to at least 15 service connections or designed to serve an average of at least 25 people for at least 60 days each year."

Open space developments have proven very flexible and adaptable in providing water supply, particularly in low-density, residentially zoned areas lacking a central water supply. Open space developments can offer practical alternatives to a central water supply. Groups of homes in a development may share community wells, which can be located where appropriate in the dedicated open space.

The flexibility of open space subdivisions allows for either on-site or central water supply. Where access to municipal water service is available, the development could make use of either or both types of supply.

## ***Wastewater Treatment***

Choosing to create an open space development allows a range of options in determining the most appropriate wastewater system for the specific development site. In the past, the choices were limited to either a municipal wastewater treatment plant or a decentralized septic tanks-and-drainfields approach.

Newer technology provides alternative approaches for decentralized systems. The first step in selecting a wastewater system for an open space development is to thoroughly review and evaluate available wastewater options, including alternative methods. The next step is

to identify the type of treatment that can best meet the needs and conditions of the particular situation.

Important considerations in choosing the most appropriate, cost-effective, and acceptable wastewater treatment system for a specific development include:

- where the wastewater will be discharged;
- type of collector sewer used;
- estimated volume of flow;
- site characteristics (including the land footprint and projected future use);
- system reliability and monitoring;
- system maintenance and personnel requirements; and
- adaptability to changes in system operation.

Soil type and wastewater volume determine the size of a wastewater treatment system. The volume of estimated daily sewage flow and a sizing factor based on soil texture and permeability determine the size and location of any soil treatment unit. The volume of sewage flow from a development can be estimated once site characteristics have been identified. This estimate is important to selecting the type of wastewater system. Selecting a treatment system requires balancing the desired treatment, the level of monitoring needed, and system costs.

Several examples follow of both on-site and off-site wastewater treatment systems that may be employed in open space developments. This is not intended as an exhaustive list, and further investigation is necessary to choose an appropriate system that best meets the needs of a particular community.

Factors that can help direct the choice of a wastewater treatment system in an open space development:

- Where will wastewater be discharged?
- What type of collector sewer will be used?
- What will be the estimated volume of flow of discharge?
- What are the characteristics of the site?
- Will the system be reliable and easy to monitor?
- Will the system be simple to maintain and adapt well to changes in operation?

## **Sub-surface Systems**

### *Common Septic System with Absorption Trenches*

Assessing and selecting treatment options requires an evaluation of how different systems could fit into the subdivision plan. Shared or clustered treatment facilities are an option for open space subdivisions in areas without enough space for individual on-site wastewater treatment systems, or for those with multi-family units. Most shared or clustered wastewater treatment facilities are larger versions of individual on-site systems. Common or shared systems may be a cost-effective choice where subdivisions are too far from central facilities, and where the homes are too close together or soils are insufficient to support an on-site system on each lot.

A common septic system is a cost-effective method that replaces individual septic leaching areas with larger, jointly owned and maintained absorption areas. The septic tanks can be individually owned and maintained by homeowners, or the tank part of the system can also be larger and jointly owned and maintained.

Common septic systems are usually employed in situations on level land with no limiting soil conditions. This type of system involves level excavations, which are then over-laid with a layer of clean crushed rock. A distribution pipe is placed on top of this layer, and then covered over with soil. Biological, chemical, and physical processes in the soil treat the wastewater. Where soil conditions are limiting, systems such as sand filters, lagoons, or soil treatment mounds may be used to receive and treat the effluent discharged from a septic tank.

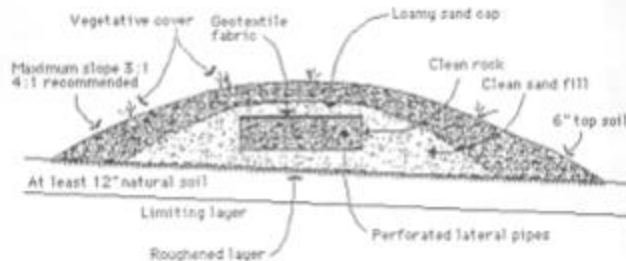
### *Soil treatment Mounds*

Soil treatment mounds are an alternative strategy where soil conditions do not support the use of sewage treatment trenches. These structures can be individually owned and maintained, but a preferable option may be to locate a shared mound system in an area of the development where it will have less impact on the environment. Requiring each home to have its own septic

mound could be detrimental to the landscape and appearance of the development.

Soil treatment mounds extend the on-site capacity of septic systems, providing an option for sites with high groundwater, high bedrock, or compact clay soils. Effluent is pumped from a septic tank into a drainfield built into a mound constructed of a layer of sandy soil, covered with a layer of crushed rock, then covered over

A typical soil treatment mound



with soil. The effluent is treated as it filters downward through the sandy soil before moving into the natural soil.

### Bioretention

Bioretention systems employ a range of pollutant removal mechanisms within an unutilized portion of the landscape. This makes them a practical alternative for some open space development situations. These mechanisms may include grass filters, mulch, temporary shallow ponding, plant uptake, sand filtration, and infiltration. All vegetative treatment systems have seasonal limitations that need to be taken into account in designing such systems. Constructed wetlands, grass filters, plant uptake, etc. do not treat during the winter months.

Several of the following treatment methods or components may be a part of an integrated bioretention or other innovative treatment system. Check with the New Hampshire Department of Environmental Services for regulatory and design and implementation advice when considering these alternative treatment designs.

### Constructed Wetlands

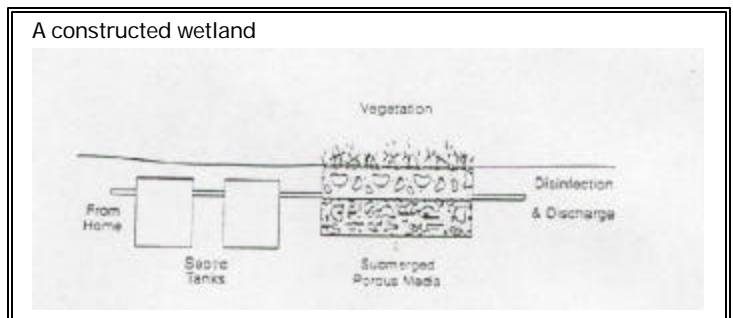
Constructed wetlands are a very flexible system that can be used to treat residential wastewater in small



communities. They have also proven useful in treating stormwater runoff in urban and agricultural areas. For wastewater treatment, constructed wetlands are most often used as a supplemental treatment of effluent from a series of septic tanks before discharging it into drainage fields. Constructed wetland systems designed for individual homes are usually about 300 square feet in area.

A shared constructed wetland may be considered as part of a wastewater treatment system, such as a bioretention system, for an open space development community. This type of system can work well where soils are not suitable for absorption and groundwater levels are high. However, constructed wetlands and all other systems relying on vegetative treatment do not function during the winter in cold climates like New Hampshire.

A constructed wetland is a man-made wastewater treatment system designed to treat wastewater by simulating the functions of a natural wetland. The constructed wetland treats effluent through the physical, chemical and biological processes of a natural wetland ecosystem. However, a properly designed man-made wetland cannot completely replicate all the ecological functions of a natural wetland.



Constructed wetland stormwater treatment systems store stormwater temporarily in shallow pools, creating favorable conditions for wetland plants, which help to remove pollutants. The plants and associated microbial activity of the constructed wetland filter sediments, take up nutrients, and breakdown carbonaceous materials.

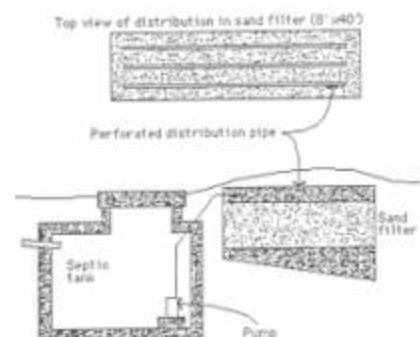
#### Sand filters

Sand filters use sand to treat wastewater, similar to a soil treatment mound. However, sand filters are either open or buried, rather than built up like soil treatment mounds. While soil treatment mounds are used to

extend the use of on-site systems in areas with high groundwater, sand filters are applied in areas with more adequate soil conditions. Sand filters are an appropriate system for open space developments where soils are satisfactory and extension of an on-site system is not necessary.

Best suited for populations of 1,000 or less, sand filters are appropriate for rural communities and small clusters of homes. Sand filters are approved for use by individual homes, but can also be used in open space developments, either on individual lots or shared by households within the community.

A typical sand filter



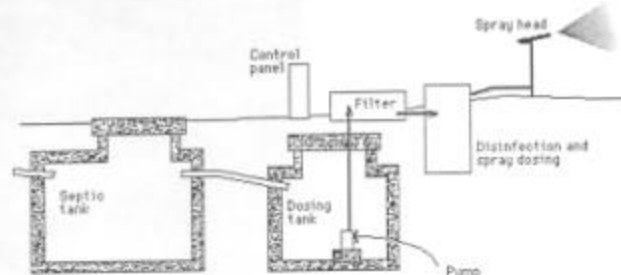
After pretreatment in a septic tank, effluent is pumped or flows over a sand filter—a bed of sand laid over a drainpipe collection system. After passing through the sand, the effluent drains from the gravel and pipe network below the filter. The effluent then discharges into the disposal system, or directly into the environment.

## Above Surface Systems

### Spray Irrigation

The basic components of a spray irrigation system are a septic tank, a sand filter, and a disinfection unit within a spray applicator. Soil permeability, depth to saturated soil, availability of a buffer zone, and land slope determine a site's suitability for a spray irrigation system. Three general methods of land application for spray irrigation systems are *slow rate*, *overland flow*, and *rapid infiltration*.

A spray irrigation system



The slow rate approach uses vegetation to absorb moisture and nitrogen. This system requires careful balancing of effluent volume and nutrient content with the crops grown, soils, geology, and climatic conditions. The slow rate system can be used to irrigate and fertilize crops in either arid or humid regions, and is used in states like New Hampshire.

The overland flow method of spray irrigation land application cleanses pretreated wastewater through filtration, biological oxidation, and sedimentation processes as it trickles down a vegetated slope of land. The treated runoff is collected in drainage channels or ditches at the base of the slope, for discharge to subsurface disposal areas.

All land treatment systems require pretreatment, ranging from primary clarification to a one-day aeration in a containment cell. Both the slow rate and overland flow irrigation systems can be used in cold winter climates. The slow rate system has been used successfully at a development in Franconia, New Hampshire, and the overland flow method has been used successfully in Hanover, New Hampshire.

The three types of spray irrigation land application systems can be combined in an integrated system. Rapid infiltration, which is used with highly permeable soils, can follow overland flow, or vice versa. The treated effluent can then be pumped by means of recovery wells for application to the land through slow infiltration.

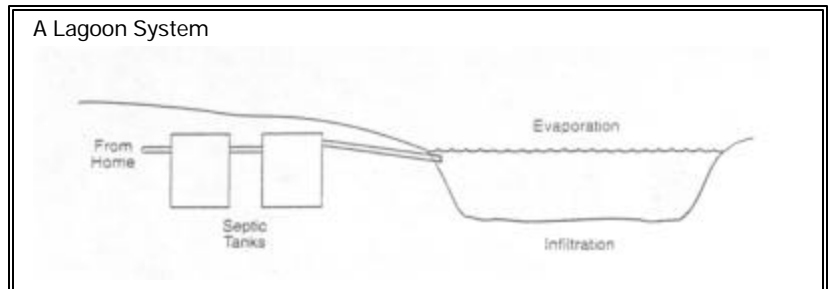
For individual home spray irrigation systems, requiring disinfection and fencing may be advisable. Spray irrigation systems require more land than other wastewater treatment alternatives. However, where ample land is available at a reasonable price, spray irrigation can be a viable, cost-effective system in a residential area.

Spray irrigation systems differ from conventional wastewater treatment methods in that spray irrigation applies wastewater to land, instead of discharging it into a river, lake, or ocean. Spray irrigation treatment sites include woodlands, agricultural fields, golf courses, and residen-

tial yards. In open space developments, the treated wastewater may be applied on the preserved open space land where appropriate—whether the land is used for silvicultural, agricultural, recreational, or some other use.

### Lagoons

In northern regions, where cold winter temperatures limit the spraying of treated wastewater, larger holding lagoons can be used to treat wastewater. These heavily aerated lagoons do not create odor problems, and hence do not have to be placed long distances from residences. Lagoons receive pretreated discharges from septic tanks, constructed wetlands, or other pre-treatment systems. The waste is broken down further through the extended retention in the lagoon, combined with exposure to sunlight. The effluent evaporates, seeps into the soil, or receives additional treatment through spray irrigation.



Unlike constructed wetlands, which treat wastewater by bacterial decomposition, settling, and filtering, lagoons are simply receiving basins for pretreated or untreated wastewater. Because lagoons usually require considerable space, open space subdivisions would most likely utilize shared or common lagoon systems.

### **Stormwater Management**

Stormwater management systems are classified as either major or minor. Flooding, convenience, and water quality are the main factors in the design of stormwater systems. The paths taken by runoff from very large storms comprise major systems. Minor systems are comprised of storm sewers and other facilities designed to quickly collect and discharge the peak flow of runoff from streets and sidewalks. Runoff can carry pollutants such as sediments, nutrients, and chemicals from fertilizer, oil, gasoline, and other contaminants. These

pollutants carried by stormwater can seriously degrade water quality.

Conventional subdivisions cover entire parcels with house lots, in most cases requiring the servicing of each lot by streets with curbs, gutters, and storm sewers. The roofs and large areas of pavement in conventional developments create a high percentage of impervious surfaces, drastically reducing the amount of rainfall that can be absorbed into the ground. When water falls on impervious surfaces, it runs off much more quickly than when it falls on vegetated soil. This in turn creates problems such as erosion, water pollution, and flooding. Little can be done under conventional zoning to minimize or prevent these adverse effects.

Even though open space zoning allows the same number of houses as conventional zoning, the design requirements for open space developments offer an opportunity to manage stormwater more effectively than in conventional developments. The areas of impervious surfaces are reduced in open space developments because preserved areas of the site are larger, lots are smaller, and roadways can be designed more efficiently. As runoff flows more slowly over ground with vegetative cover, more water is absorbed into the soil, and more pollutants are filtered out before reaching lakes, rivers, and streams.

When designing a stormwater management system for an open space development, a developer may find the protected land advantageous. Steep slopes, natural drainage ways, and areas of prime vegetation useful to stormwater management may be found in the open space. The smaller, narrower lots of open space developments are another advantage for stormwater management, because paved areas for driveways and walks are reduced.

Open space developments use drainage devices such as ditches and swales—man-made depressions with vegetative cover into which stormwater can drain—to manage stormwater. Where such systems can replace storm sewers, development costs are reduced.

If the public works department is not responsible for the system, provision must be made for maintenance of a development's stormwater management system. This could be managed by the homeowner's association, or by a private utility or corporate organization.

Despite the worries of many individuals about inadequate or unsafe water supplies and sewage systems, open space developments offer developers a variety of innovative and cost-saving water and sewer service options.

## APPENDIX III.

### CO-HOUSING

Co-housing is a kind of development that is planned for residents who share a philosophy of community life. The goals of this cooperative housing alternative are to provide housing flexibility, promote neighborhood cohesiveness, and revive some traditional aspects of community life.

Often designed as a specialized type of open space development, co-housing also aims to provide housing while preserving open space for the benefit and enjoyment of the community. Co-housing developments usually feature a variety of clustered housing types, and maintain a portion of the site as open space for pathways, gardens, and recreation. The co-housing concept has slowly gained interest in the United States. Examples of co-housing communities in the Northeast can be found in Norwich, Vermont; Amherst, Massachusetts and Ithaca, New York. A co-housing development is being proposed in Barrington, New Hampshire.

This type of cooperative housing was first developed in the 1970s in Denmark and the Netherlands. The idea soon caught on in other northern European countries and, by the late 1980s, co-housing began to appear in North America. Co-housing communities vary in size, design, and ownership structure. While they will make use of planners and architects when designing a co-housing community, for the most part the residents themselves organize, plan, and manage the community.

Co-housing is comprised of a group of unrelated people who form an *intentional community*, choosing to have their own private dwellings while sharing common areas and resources. These families develop as separate families amongst a larger family. For the most part, families in co-housing communities desire a deeper sense of community and aspire to meaningful social relationships. Each family decides how involved to become in co-housing community life.

While some of the defining characteristics of co-housing are similar to those of open space subdivisions, some are distinct.

1. The residents join together to organize and plan the co-housing development. Design and governance decisions for the proposed co-housing venture are made through a participatory process. All financial decisions are the responsibility of the group of residents.
2. The co-housing development is designed with the expressed intention of promoting a strong sense of community, as well as preserving and maintaining open land and natural features. Co-housing shares this commitment to protecting open space with open space development design.
3. An important goal in co-housing neighborhood design is to create extensive common facilities to supplement private living areas and to promote a more closely-knit community life. This is similar to the open space development goal of providing areas where residents feel safe and comfortable socializing or enjoying the surrounding environment.

#### FEATURES OF CO-HOUSING:

1. Residents come together to organize and plan the development.
2. Co-housing is designed with the intent of promoting a strong sense of community while preserving and maintaining land and natural features.
3. An effort is made to incorporate extensive common facilities as a supplement to private living areas.
4. The development is managed either through a homeowner's association or a condominium association.

4. The residents of the development can organize their management structure either as a homeowner's association or a condominium association. The preserved land and common utilities and facilities in open space subdivisions are similarly managed through a homeowner's association or condominium association of the residents of the development.



Numerous issues must be addressed, as with any type of development, beginning with the proposal and design of a co-housing subdivision, through completion of the project. Legal requirements, making sure the physical design of the subdivision fits the needs of the incoming residents, and the form of governance and management are among the questions to be answered in the process of creating a co-housing development.

### ***The Physical Aspects of Co-housing***

An important and distinctive aspect of co-housing development is the physical design, which reflects the primary purpose of promoting and encouraging strong neighborhood connections. Creating opportunities for social interaction and enhancing the social environment are integral to the physical design of co-housing developments.

A co-housing development typically consists of; a common house (CH), playing/recreation fields (P) parking (PK), and homes surrounding and surrounded by open space.



In choosing the location of a co-housing subdivision, an important consideration is how it will relate to the surrounding neighborhood, and how it will function within the larger community. Most co-housing groups have made compromises in selecting their location, choosing a suburban district or small town where fairly affordable sites allow easy access to services, community facilities, and recreational open space.

Pioneer Valley Co-housing  
(Amherst, Massachusetts)

Design flexibility is another characteristic of co-housing developments. In theory, a co-housing community can be created with any form of housing. Co-housing developments have been formed with detached single-family houses, attached row houses, dwellings clustered around courtyards, rehabilitated factories and schools, and even high-rise buildings. This flexibility of the physical design allows a co-housing development to incorporate several different subdivision types.

Because of this flexibility and inclusion of compact housing forms, co-housing developments can use land more efficiently. For example, a co-housing community can incorporate clustered housing to preserve common open space, which might be used for playgrounds or fields. Clustering is popular for co-housing communities because it provides both privacy and a sense of community.

A co-housing community can use design techniques to better integrate the development with the surrounding community. For example, placing shared recreation areas, links to neighborhood pathways, or public plazas at or near the development's physical boundaries can reduce insularity of the co-housing community from adjacent neighborhoods.

Co-housing designers make great efforts to plan their community so that it provides diversity in housing without sacrificing architectural aesthetics. The sizes of houses and layout design in co-housing communities can vary to accommodate individuals with diverse family and economic circumstances.

### ***The Legal Aspects of Co-housing***

Some of the legal issues that individuals involved in co-housing developments must address are quite similar to those faced in planning open space subdivisions. One issue for co-housing is provision of appropriate documentation for establishing an umbrella or core group of individuals who can legally represent the development. A second necessary step is to research the regulations and zoning applicable to the land to be purchased. In most cases, the existing zoning must be examined, and then changed to allow co-housing to occur. Option agreements and contracts for the purchase and sale of land for the development must also be drafted and negotiated.

The bylaws are among the most important corporate documents in forming a co-housing development. Co-housing bylaws are usually private, governing the fundamental internal affairs of the corporation. The bylaws establish how membership is initiated and

terminated, delegations of authority, and how group meetings are conducted and decisions made. The bylaws contain provisions essential to the function and stability of the group.

In addition to the bylaws, the co-housing group creates and maintains a body of rules governing the internal affairs of the corporation. Decisions made by the members in their group meetings are summarized and recorded. These rules are often the most detailed and frequently consulted of the co-housing corporate documents.

Ownership structure is another legal issue to consider in establishing a co-housing community. Ownership is usually structured as either a joint venture or a partnership. A partnership is a legal agreement among individuals stating their intentions, obligations, and responsibilities. A joint venture or limited partnership is frequently used when groups first incorporate and purchase land. Individual members of a simple partnership share the responsibilities and liabilities of the development equally. The residents of the development determine the ownership structure of the development.

Different co-housing groups have implemented various forms of co-housing ownership. Some groups have found it beneficial to utilize two or more forms of ownership. For example, individually owned houses can be built within a development with few or no common areas, while locating the common house, woodland, or other open space on nearby land owned by a cooperative or land trust. All groups intending to venture into a co-housing development must address the issue of ownership type.

### ***The Management of Co-housing***

The co-housing concept is more about how people can live together than about financial or ownership struc-

#### **Legal Aspects to Consider in Co-housing:**

- Provision of appropriate documentation needed for the creation of an umbrella or core group of individuals who can legally represent the development.
- Examination of the regulations and zoning applicable to the land to be purchased for the development.
- Drafting and negotiating options agreements and contracts for the purchase and sale of land for the development.

ture. The ownership of housing in a co-housing development is similar to that in open space developments—the houses are privately owned, and each homeowner also owns an interest in the common areas.

All co-housing community residents participate in the management of the development through either a homeowner's association or condominium association. This group is responsible for the care and maintenance of the buildings and land in the development, and members are required to pay monthly maintenance fees. Residents can work on various community committees.

Clustering houses around a common green in this co-housing development allows for huge amounts of open space to be used for woods, fields, and trails.



Two Echo Co-housing Community  
(Brunswick, Maine)

The common house supplements the individual housing units and forms the heart of the co-housing community. This important and distinctive feature of a co-housing development may include a kitchen and dining room, a meeting room, and other rooms for various activities. The common house is a central focus of a co-housing community, providing a place for many community activities. The community's members determine the specific features of the common house to serve their interests and needs.

The community members manage both the common house and the land in a co-housing community. Green spaces are usually pedestrian-friendly and surrounded by a cluster of homes. Community designers generally try to eliminate automobiles from the interior of the community, thus decreasing traffic noise, pollution, and safety hazards, and preserving more open space for recreation, leisure, and aesthetic enjoyment.

## ***The Social Aspects of Co-housing***

While co-housing is not for everyone, people who have lived in and studied co-housing attribute many social benefits to this type of community. Residents can more readily share knowledge and skills, and offer and accept support in a co-housing neighborhood. Members can share common resources, including items for occasional use, such as lawnmowers and ladders.

This communal approach may be fostered by the social structure of co-housing, which emphasizes caring and concern for the welfare of others in the community. This mutual consideration can alleviate stress, foster meaningful relationships, and help weave the strong social fabric of most co-housing communities.

Co-housing communities also may foster more sharing of ideas and experiences between residents. This can probably be attributed to the closer social relationships often found among individuals in these developments.

Co-housing encourages human interaction and support across generations to individuals of all ages. Elders can benefit from living in a house within a close community, and sharing their expertise and experience with younger generation members who value their skills and abilities.

Co-housing and open space developments can both preserve valuable open space. Both types of developments use cluster housing to conserve land and protect the natural environment. As the popularity of both co-housing and open space developments grows, expect to see more of these innovative types of subdivisions.

## **APPENDIX IV.**

### **A Sample Zoning Ordinance Text**

#### **RESIDENTIAL OPEN SPACE – CLUSTER DEVELOPMENT BY CONDITIONAL USE PERMIT**

##### **8.1. RESIDENTIAL OPEN SPACE – CLUSTER DEVELOPMENT.**

Pursuant to RSA 674:21, the Planning Board is hereby authorized to grant a Conditional Use Permit to allow for an Open Space – Cluster Development in accordance with the restrictions and requirements of this section. The Planning Board is further authorized to adopt amendments to the Subdivision Regulations in order to further administer the requirements of this ordinance.

8.1.1. Purpose – This section is to provide a flexible method of residential development that is consistent with principles of sound planning and wise land use that are not specifically permitted in the current zoning ordinance. All developments seeking a conditional use permit shall be administered by the Planning Board to ensure that Open Space – Cluster Development opportunities do not adversely impact neighboring properties, or the citizens and Town of [TOWN]. The Planning Board shall consider the following purposes and balance them accordingly during review of individual applications.

A. Maintain and Preserve rural character of the Town of [TOWN] by allowing an alternative residential development option which preserves large areas of open space, provides for visual buffers from existing roads and residential development, and permits farming opportunities on parcels of open space.

B. Preserve large, contiguous parcels of open space throughout the town and as found in the [TOWN] Master Plan designated and referred to as the [TOWN] \_\_\_ on Map \_\_\_.

C. Provide for a diversity of housing types, opportunities, and styles.

D. Encourage flexible road design that will contribute to and enhance a rural atmosphere and maintain minimal safety design.

E. To provide for connected corridors of open land throughout town for preservation of habitat, environmental resources, and public enjoyment.

F. As part of an alternative for residential development, to require clustering of homes in a manner that includes proximity in physical location while minimizing confusion over issues of property ownership.

8.1.2. Conditional Use Permits. All Open Space – Cluster Developments shall obtain a conditional use permit from the Planning Board. The conditional use permit shall clearly set forth all conditions of approval and shall clearly list all plans, drawings and other submittals that are part of the approved use. Everything shown or otherwise indicated on a plan or submittal that is listed on the conditional use permit shall be considered to be a condition of approval. Construction shall not deviate from the stated conditions without approval of the modification by the Planning Board.

8.1.3. Application Procedure. Applications for conditional use permits for an Open Space – Cluster Development shall be made in accordance with the procedures set forth in the relevant sections of the Subdivision Regulations of the [TOWN] Planning Board.

8.1.4. Approval of Applications. Prior to issuance of a building permit, the applicant shall acquire a conditional use permit as well as any other necessary Planning Board approval. A conditional use permit shall be issued only if an Open Space – Cluster Development complies with all of the requirements of this section. The Planning Board may condition its approval on reasonable conditions

necessary to accomplish the objectives of this section or of the [TOWN] Master Plan, Zoning Ordinance, or any other federal, state, town resolution, regulation, or law, including but not limited to a reasonable reduction in allowed density, a reasonable increase in required frontage, set-backs, or any other requirement if necessary to accomplish said objectives. The conditional use permit is meant to provide flexibility, minimize adverse impacts, and allow the Board to participate jointly with the applicant to prepare a development that is consistent with this ordinance, regulations, and the Master Plan for the town of [TOWN].

8.1.5. General. The Open Space – Cluster Development provisions of this ordinance provide applicants with an alternative development approach intended to promote flexibility and innovation in land planning. Within this context, the ordinances that are established are intended to be a minimum consideration of allowable impacts. Each tract of land possesses different, unique development characteristics and limitations, and the Open Space – Cluster Development use allowed on any particular tract will be a function of innovative land planning and subdivision design interacting with the special characteristics and limitations of the site.

The following definitions specifically apply to this Section of the Zoning Ordinance:

A. Common Area. Any parcel or area of land and/or area of water set aside as a result of a cluster plan. The common area is designed for the benefit and enjoyment of the residents of a cluster development. These areas may contain accessory structures and improvements necessary and appropriate for the educational, recreational, cultural, social or other non-commercial/non-residential/non-industrial uses, plus any utility services utilized by the owners of the common area.

B. Conservation Land. Land given to a public body dedicated to conservation of forests, park land, etc., or to a private conservation trust, with the intent of



preserving in its original ecological condition, safeguarding water supplies, or diminishing flood danger.

C. Mandatory Home Association. A private non-profit corporation, association or other non-profit legal entity established by the developer for the benefit and enjoyment of the residents of the Cluster Development. Membership in said association shall be mandatory for property owners and made a required covenant in any deed issued or passed. It shall provide voting and use rights in the common area when applicable and may charge dues to cover expenses, which may include tax liabilities of the common area, recreational or utility facilities. Articles of Association or Incorporation must be acceptable to the Planning Board and by the Town Counsel and any other municipal, county, state agency, body, commission or department required by law to approve of the same.

D. Open Space Easement. Land whose development rights have been legally restricted, either by deed or by public purchase of those rights. The easement may be so worded as to permit or restrict public access, to allow or disallow recreational development, and similar provisions. Easements are tied to the title of the land, regardless of its subsequent ownership.

E. Public Open Land. Land purchased by or given to the Town of [TOWN] for parks, playgrounds, or an undeveloped open space, generally with the intention of making it accessible for public use.

8.1.6. Strict adherence to these provisions shall not be construed as establishing a legal right to a conditional use permit for a cluster development. Those who wish to pursue their development rights to a certain use or development of land should consider developing their land with the permitted, conventional subdivision approaches, or through the variance procedure as provided for by New Hampshire law.

8.1.7. Lot Size and Frontage – The minimum lot size for an Open Space – Cluster Development is 20 acres. The minimum frontage for the development shall be a contiguous 100 feet and of sufficient length to provide safe access for a right-of-way of at least 60 feet. At least one access shall be within the minimum frontage. The minimum frontage and access shall be within the Town of [TOWN]. If, however, the subject parcel has only 50 feet of frontage and was legally created prior to the date of adoption of this ordinance under ordinances and regulations that required at least a 50-foot minimum right-of-way, 50 feet shall be the minimum required frontage for such pre-existing lots. Frontage lands on roads existing at the time of application shall be preserved as buffers to the maximum extent possible in addition to all required setbacks. After the passage of this ordinance, any parcel that subdivides more than 50% of the frontage away from the parent parcel shall not be eligible for an Open Space – Cluster Development for a period of 4 years from the date of the subdivision approval. Merging the required parcels with the parent parcel to achieve the 50% original required frontage shall nullify this restriction.

8.1.8 Density – Maximum density for an Open Space – Cluster Development shall be determined by use of a yield plan. The purpose of a yield plan is to show the density that is reasonably achievable under a conventional subdivision following the requirements of the zoning ordinance and subdivision regulations. The Planning Board shall adopt regulations that provide for the generation of a yield plan in accordance with this section.

8.1.9. Density Bonus – If required criteria are met, the [TOWN] Planning Board may award the development a density bonus. The total density bonus awarded to a particular development authorized under this section for innovative protection bonuses shall not exceed 15% of the yield plan. The density bonus shall be applied to the number of lots achievable under the yield plan. Where a final number is greater than .5, the density

number may be rounded up to the next whole number. The minimum density bonus regardless of percentage achieved shall be one lot. Density bonuses awarded for preserving frontage lots shall be in addition to the above 15%, but in no event shall the total density bonus exceed the soil-based carrying capacity for the entire parcel or 80% of the yield plan. The Planning Board shall adopt regulations that provide for density bonuses in accordance with this section.

8.1.10. Standards for Approval – All standards below must be met or impacts mitigated to the satisfaction of the Planning Board prior to the granting of a Conditional Use Permit.

A. The permit is in compliance with this ordinance and is in the public interest.

B. There will be no greater diminution of neighboring property values than would be created under any other use or development permitted in the underlying zone.

C. That there are no existing violations of the [TOWN] zoning ordinance on the subject property.

D. That the character of the area shall not be adversely affected. This determination, to be made by the Planning Board, shall be made by considering the following aspects of the surrounding area.

1. Consistency of architecture, except for single-family detached development, determined through analysis of the following:

- Roof pitches;
- Siding types;
- Architectural styles of residential structures;
- Proportional aspects of facades, building locations on lots.

2. Transportation, determined through analysis of the following:

- Access for safety vehicles onto the site, within the site, and to individual houses;
- Capacity of nearby and affected intersections, and transportation corridors;
- Cost for municipality to maintain roadways;
- Layout, width, and construction of roadways on the site.

3. Protection of natural resources, determined through analysis of the following:

- Protection of environmentally sensitive areas, including, but not limited to, wetlands, shoreland buffers, wildlife corridors, significant groundwater resources, etc.;
- Maintenance of viewsheds and other visually appealing aspects of the site.

4. Protection of cultural resources, determined through analysis of the following:

- Establishment of new and protecting existing trailways for travel;
- Protection of historic buildings or significant historical landscapes;
- Establishment, protection and promotion for agricultural uses of the site.

E. That granting the permit will not result in undue municipal expense.

F. That the proposed development will be constructed in a manner compatible with the spirit and intent of the [TOWN] Master Plan and Zoning Ordinance.

G. That the capacity of existing or planned community facilities and services (including streets and highways) will not be adversely impacted. Mitigation of these impacts by the developer can be

properly considered in granting of a conditional use permit.

H. That the general welfare of the Town will be protected.

1. Landscaping or other appropriate buffers of sufficient opacity and materials shall be required if deemed reasonably necessary for the welfare of neighboring properties or the Town.

## 8.2. OTHER REGULATIONS APPLICABLE.

The Planning Board shall adopt sections of the Subdivision Regulations not pre-empted by this ordinance which shall apply to the Open Space – Cluster Development, including the right to waive such regulations. Where not specifically pre-empted by the provisions of this ordinance, the requirement that is more restrictive shall apply. The Planning Board shall determine if pre-emption is intended by the provisions of this ordinance, and/or what requirement that is to apply is more restrictive.

## 8.3 MINIMUM OPEN SPACE REQUIREMENTS.

In addition to the requirements of this section, the Planning Board shall adopt regulations that prescribe additional criteria for Open Space parcels.

8.3.1 The parcel must contain a minimum of 35% of the total land in the parcel dedicated as open space.

8.3.2. Such land shall be preserved in perpetuity through deed restriction or conservation easement, and designated on the approved and recorded plat. Such restriction shall be approved by the Planning Board and Town Counsel.

8.3.3. The minimum required open space is land unbuilt upon, which must be permanently kept in that condition, and cannot be subjected to current use taxation or discretionary easements. However, actively operated farmland, classified as “prime” or “unique” by the Rockingham County Conservation

District will be entitled to current use taxation or discretionary easements.

8.3.4. The open space and/or common area within a cluster development shall be owned by and bound by one or more of the following:

A. Mandatory Homeowner's Association, which may use it for common recreational facilities or may designate it as Open Space, or may grant a public body an Open Space Easement.

B. A public body which shall use it as Conservation Land or Public Open Land.

C. Such designation must be made prior to approval of the subdivision application by the Planning Board; such lands shall be held in such type of legal entity as the Planning Board deems appropriate.

#### 8.4 GENERAL REQUIREMENTS.

##### 8.4.1. Uses.

A. Only residential uses shall be permitted in the Cluster - Open Space Developments.

1. Single-family detached homes are permitted.

2. Multi-family units shall be permitted up to a unit count of 4 per building or structure. These are units that are structurally joined and share walls with no yard between units.

3. Joined-Array Units. Single-family units that are attached by and share a common yard and/or fence as part of a tightly-constructed joined-array, not to exceed four joined units, shall be considered single-family units for setbacks to other arrays or detached units but shall not require setbacks from each other provided that yard space at least 20 feet wide is available for individual use between units. In no case shall structures be less than 10 feet apart.

#### 8.4.2. Setback and other dimensions.

##### A. The following frontage requirements shall apply.

1. Each single-family lot or unit shall have 50' of frontage on interior roadways.
2. Joined-Array single family as described in §8.4.1,A,3, shall have 125' of frontage.
3. Duplex and multi-family units, sharing a common wall shall have 75' of frontage.

##### B. All developments shall contain some form of lot delineation or lines that designate a reasonable amount of land attributable to each particular structure.

##### C. The following setbacks shall apply to all residential structures within the development:

1. Setbacks from exterior property lines of the entire parcel shall be 25' for single-family detached units, with an additional 15' per unit for multi-unit structures (e.g. 4 unit attached = 85').
2. 30' setback from the edge of pavement for roadways within, and part of, the development.
3. 40' structural separation for all single-family unit structures within the development, subject however to §8.4.1,A, 3.
4. 50' structural separation setback for multi-family units from all other structures.
5. 10' structural setback from all lot lines.

#### 8.4.3. Utilities.

##### A. All utilities serving the development shall be underground. The Planning Board may waive the requirement for underground utilities along lengthy entrance roads that are visually separated from the clustered housing units. The Planning Board may

not waive this requirement within the network of the development.

#### 8.5 EXPIRATION.

Any Conditional Use Permit shall expire if active and substantial development or building has not begun on the site by the owner or the owner's successor in interest in accordance with the approved plat within 12 months after the date of approval. As part of its approval of a plat or plan, the Planning Board may, with due regard to the scope and details of a particular project, specify the threshold level of work which shall constitute "active and substantial development or building" for purposes of fulfilling this paragraph. In such cases, a new application for a Conditional Use Permit must be completed.



## **APPENDIX V.**

### **A Sample Open Space-Cluster Subdivision Regulations Text**

#### **OPEN SPACE-CLUSTER SUBDIVISION REGULATIONS**

##### **4.6 OPEN SPACE-CLUSTER SUBDIVISION**

4.6.1. General. The Open Space-Cluster development provisions of these regulations are adopted in accordance with the authorization present in the Open Space-Cluster Ordinance. These regulations are required to administer and regulate the flexibility that is meant to be an inherent part of this development process.

This process is meant to provide applicants with an alternative development approach intended to promote creativity and innovation in land planning. Within this context, these regulations that are established are intended to be a minimum consideration of allowable impacts. Each tract of land possesses different, unique development characteristics and limitations, and the Open Space-Cluster development use allowed on any particular tract will be a function of innovative subdivision design interacting with the special characteristics and limitations of the site.

The definitions found in the [TOWN] Zoning Ordinance shall apply to this Section of the Subdivision Regulations.

4.6.2. Application Procedure. Applications for an Open Space-Cluster development shall be made in accordance with the procedures set forth in the relevant sections of these Subdivision Regulations.

4.6.3. Legal Review Approval. The legal review of the proposed development shall be conducted under the conditions delineated herein:

- A. Any condominium agreements, deed restrictions, organizational provisions for a Homeowner's

Association, or any legal entities providing for ownership of individual dwelling units and a sharing of certain utilities, open space, common areas, and auxiliary facilities and structures, must be approved in writing by the Planning Board and by Town Counsel and any other municipal, county, or state agency, body, commission or department required by law to assure the same.

B. The developer will submit a suitable legal instrument which, to the satisfaction of the Board and/or Town Counsel, will assure that such open space and/or common land will continue to be used for conservation, park or recreation, and shall not be disposed of by sale or otherwise except to any organization established for the purpose of owning and maintaining such open space.

C. Such developer shall also provide for adequate maintenance of such area set aside for conservation, park or recreation. Such developer shall provide for the insertion in all deeds, in a form approved by the Planning Board and/or the Town Counsel, any and all safeguards and conditions suitable to carry out the purposes of these regulations.

D. Such legal instruments shall also provide that the Town of [TOWN], its agents, servants, and employees may, without liability, enter upon such land held for conservation, park or recreation and remove, or cause to be removed, anything, object, or condition which may be deemed to be a nuisance or in the nature of a nuisance.

4.6.4. Yield Plan. In accordance with the Open Space-Cluster Development Ordinance, the applicable density shall be determined through submittal of a yield plan. The yield plan shall be reviewed and approved by the Planning Board in accordance with the following:

A. The yield plan shall incorporate soils information sufficient to determine estimated lot sizes by soil type.

B. The yield plan shall incorporate roads and rights-of-way that provide for a layout that corresponds with existing state and federal laws, town ordinances, and subdivision regulations, including, but not limited to, minimization of wetland crossings, road length requirements, right-of-way widths, and safe sight distance for entrances.

C. The yield plan is meant to be conceptual in nature but must be realistic and not show potential house sites or streets in areas that would not ordinarily be legally permitted in a conventional layout.

D. In addition to the above, the yield plan shall include basic topography, wetlands, floodplains, steep slopes (greater than 25%), soils subject to slumping, and contiguous non-wet areas and other areas of land where it is not feasible to accommodate building sites and individual septic systems.

E. In order to show that the yield plan is reasonably achievable, 20% of the lots, randomly distributed throughout the yield plan, shall indicate one test pit which complies with all local, state, and federal requirements including, but not limited to, depth to estimated seasonal high water table, setbacks to lot lines and structures, and wetland setbacks. These lots shall be selected by the applicant; however, the Planning Board, at its discretion, may seek additional lots for testing if doubts arise.

F. The yield plan shall comply with conventional subdivision standards and shall not require a variance or waiver from the existing ordinances or regulations in order to achieve the layout supporting the proposed density.

4.6.5. Innovative Open Space Bonus. These regulations provide for the available open space bonus as authorized in the Open Space-Cluster Ordinance.

A. Where the proposed Open Space Cluster plan shows 50% or more of the total parcel as open

space protected as such in perpetuity, the development may be awarded a density bonus of 10%.

B. Public Access Bonus – Where the public is granted access to the open space, the development may be awarded a density bonus of 5%. The nature of public access required to trigger this bonus is pedestrian traffic. The instrument granting access, acceptable to the Planning Board, may reasonably restrict the use of motorized vehicles.

C. Agricultural Lands and Use Bonus – Where the development protects agriculturally valuable lands and provides permission for their use as such in perpetuity, the development may be awarded a density bonus of 10%. The Planning Board shall, on a case-by-case basis, determine the bonus percentage by considering the size of the project and the number of acres of farmland preserved. The open space portion preserved for agricultural use must amount to a minimum of 50% of the minimum required open space and either has been historically farmed, or contain good soils for farming and must be reasonably accessible to receive the maximum bonus. A minimum of three and one-half (3.5) contiguous acres must be available for agricultural uses in order to receive any bonus under this section. The instrument granting use, acceptable to the Planning Board, may reasonably restrict the type or intensity of farming to occur to prevent nuisances. This provision only requires that permission is reasonably available; the fact that agricultural uses are not pursued at any particular time does not affect the validity of the bonus.

D. Additional Protection Bonus – Where the development is able to protect unique characteristics, including and limited to the following:

1. Viewsheds, which are lands or corridors of land that contribute to the visual landscape of the town, including items such as open fields containing stonewalls, mature stands of trees, visible water bodies and their natural buffers.

2. Historically significant buildings and landscapes, identified as such in the Master Plan, that include buildings and associated uses that are maintained and visually separated from the developed portion of the cluster development. Structures or landscapes not identified as such through the Master Plan may be determined by sufficient evidence presented to the Planning Board during review of the cluster development. Such evidence may include Heritage Commission comment, listing or eligibility for listing on the National Register of Historic Landmarks, or other qualified statements of historic value.

3. Valuable wildlife and environmental areas that are otherwise buildable land, proven as such through an environmental resource inventory by a qualified wildlife biologist specializing in either flora or fauna. Reports by a wetlands or soil scientist shall not satisfy this criteria.

4. Linking open space parcels or trail corridors through the site with existing trails or open space networks. The beginning of such a network or trailway may be considered as linking where reasonable opportunity is present for establishing through corridors into neighboring parcels and provided that Conservation Commission comment is in favor of this location.

If the development protects one or more of the above, it may be awarded a density bonus of 10%. The development must provide for the protection of these resources in perpetuity and trail corridor protection must allow for reasonable public access.

5. Density bonus for frontage lots. Where a development is proposed such that a potential lot with the required legal frontage, on a roadway existing at the time of application within the Town of [TOWN], for the underlying zone has been preserved in a natural condition, the Open Space-Cluster development shall receive an

additional bonus of 2.5 lots in addition to any bonus awarded under this section.

4.6.6. Open Space Criteria. Usable Open Space shall be reasonably available for recreational use by the residents of the subdivision. General public use may be considered but shall not be required. The usability criteria is necessitated by the subdivision. Where land is to be developed in a manner that will result in a significant number of people forming a community on that land, adequate recreational space is a necessity. These criteria are intended to provide that those moving into the subdivision will have an adequate recreational area.

A. A minimum of 25% of the total required open space land must be usable uplands and reasonably available for recreational purposes, provided, however, that no more than 50% shall be utilized for such purpose in order to preserve a reasonable proportion of natural area on the site.

B. Recreational uses may include, but are not limited to, trailways, recreational/athletic fields for sports, cross country ski trails, tennis facilities, swimming pools, playgrounds for children, off-road bicycle paths, horseback-riding, etc.

1. Uses customarily accessory to permitted outdoor-recreational uses such as small clubhouses (less than 1,500-square-foot footprint), maintenance facilities, or gazebos shall be permitted.

2. Where recreational uses may interfere with neighboring residentially zoned or used parcels, the Planning Board shall require mitigative measures to lessen any projected negative effects. Such measures may include sufficiently opaque visual buffers, placement within the interior of the development, and limitations on night lighting and use.

3. Recreational facilities shall be constructed by the developer or financial provision for construction shall be provided by the developer to the

homeowner's association in order to adequately ensure their proper creation.

4. Land targeted for recreational use shall not occupy the exterior buffer of the development site unless such use is limited to trailways.

C. The minimum required Open Space shall not contain more than 50% of the sum of the following kinds of unbuildable land:

- Wetlands, as defined elsewhere in this ordinance or, if not so defined, as found in state law.
- Slopes exceeding a grade of 25%, or soils subject to slumping.
- Drainage facilities, except that constructed ponds that are filled with water year-round, that are part of a drainage plan, may be included in the open space calculation, provided that access is not restricted.
- Land used for septic systems.
- Floodways, and floodway fringe within the 100-year floodplain as shown on official FEMA maps.

D. No portion of public utility easements, of any kind, may be considered part of the minimum required open space. Expansion or creation of a public utility easement after approval of a development shall not affect the requirements for provision of open space or recreational uses of the development.

E. Open Space Layout. Open space land shall be designated as undivided parcels to facilitate easement monitoring, enforcement, maintenance, and to promote appropriate management by a single entity according to approved land management standards.

1. As part of the application, an open space plan shall be submitted showing clear delineation

tion of parcels of open space land that is not to be developed. The open space plan shall be recorded at the Registry of Deeds and shall indicate that development is restricted from the open space in perpetuity.

2. The minimum required open space land shall be placed in undivided preserves that equal or exceed 3 acres. All parcels between 3 and 10 acres shall have a length-to-width ratio equal to or less than 4:1; except such areas specifically designated and constructed as village greens, ballfields, upland buffers to wetlands, water bodies or water courses, or trail links. Areas less in size or dimensional requirements may be considered common land left open, but shall not be included in the minimum required open space calculation.

3. Open space shall be directly accessible to the largest practicable number of lots within the development.

4. Safe and convenient pedestrian access to open space shall be provided from all lots not adjoining the open space.

4.6.7. Development Yield. The yield for residential Open Space-Cluster development shall be determined by total bedrooms and shall not exceed the following:

4 bedroom units = (yield plan + bonuses) / 1.00

3 bedroom units = (yield plan + bonuses) / 0.85

1 & 2 bedroom units = (yield plan + bonuses) / 0.65

The development yield shall not exceed the provisions of Section 8.1.9 of the [TOWN] Zoning Ordinance.

4.6.8. Roadway Design Criteria. Road design for Open Space-Cluster development shall adhere to the roadway design criteria found in the Subdivision Regulations, as amended. The Planning Board may consider the following design waivers specifically for developments in accordance with this Article. The Planning Board may deny any and all of these waivers where future connec-



tions to other roadways is reasonably possible or anticipated. No roadway minimum shall apply where fire and safety access is jeopardized.

4.6.9. Road Specifications. Roadways within an Open Space-Cluster development may be considered for design waivers by the Planning Board in accordance with these regulations. On-street parking shall be prohibited along any street where the roadway width is equal to, or less than, 22 feet.

A. Purposes.

These road design criteria intend to promote the following purposes:

1. Promote and allow flexible and innovative design of roadways.
2. Maintain rural character through reduction in width standards, provided health and safety concerns are met.
3. Provide for and encourage the development of neighborhood environments that will enhance quality of life and property values through the inclusion of village green concepts.

B. Entrance roadways.

1. These are roadways that provide access to the development at any junction with town roads, and continue to the first internal intersection where one or more streets branch off.
2. Entrance roadways shall be built in accordance with the Subdivision Regulations, as amended.

C. Arterial Branch roadways.

1. These are roadways that serve 25 units or less and branch off from an entrance roadway.

2. Arterial branch roadways shall be built in accordance with the Subdivision Regulations, as amended. The Planning Board may permit the width to be reduced to 20 feet, provided that health and safety issues are not jeopardized by the reduced road width.

D. Common Driveways.

1. These are roadways that serve 6 units or less and branch off from an Arterial Branch roadway or Entrance roadway.

2. Common driveways that serve more than two (2) units shall be built in accordance with the Subdivision Regulations, as amended. The Planning Board may permit the width to be reduced to 18 feet, provided that health and safety issues are not jeopardized by the reduced road width.

E. Dead End roadways.

All roadway endings shall be constructed with innovative design methods in mind. The intent of this requirement is to promote the construction of aesthetically pleasing neighborhood environments within the Open Space-Cluster development. These methods shall include landscaped center loops for dead-end roads of one of the following designs:

1. Circular Loop Drive. May be 18 feet in width and with a minimum radius of 75 feet from center to the inside edge of pavement and shall be one-way only.

a. The center portion of the roadway radius shall contain remaining mature trees, or shall be landscaped with shrubs, rock, or other landscape feature and shall not consist solely of grassed open fields. These areas shall not be counted as part of the Open Space calculation.

b. Units serviced by Circular Loop Drives shall have parking facilities to accommodate

three (3) vehicles of off-street parking (this count may be met by garage space and driveway area and one space in an off-street parking area).

2. Elliptical Loop Drive. These roadways shall serve no more than 8 units, may be a minimum of 18 feet in width, and shall adhere to Minor Feeder roadway requirements.

a. The minimum dimensions of the central green for this roadway shall be 100' wide and 150' long on average, and may contain open grassed areas in addition to required landscaped areas, remaining mature trees, and any pedestrian facilities such as benches, gazebos, and playground facilities for children.

b. If a developer elects to utilize this innovative design method, the open central area shall be considered part of the open space calculation.

c. Units serviced by Elliptical Loop drives shall have parking facilities to accommodate three (3) vehicles (in total) of off-street parking (this count may be met by garage space and driveway area and one space in an off-street parking area that must be within a reasonable distance to the units served).

3. Parking. For all units, off-street parking shall be provided for three (3) cars per unit, with a minimum of a one-car garage for single-family units.

4.6.10. As part of any application, whether roadway design waivers are granted or not, the Planning Board may require additional facilities to ensure adequate access and service for safety vehicles including, but not limited to, additional off-street parking, turn-outs or turn-arounds, fire hydrants, fire ponds, or other recommended accommodations.

